

SEQUENCE LISTING

<110> Wisconsin Alumni Research Foundation

<120> Biological Control of Crown Gall Disease

<130> 960296.97273

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<150> 60/224,929

<151> 2000-08-11

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<170> PatentIn Ver. 2.1

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 Phe Ile His Thr Cys Arg Phe Glu Arg Ser Met Phe Arg Tyr Arg Glu
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 Pro Arg Ser Tyr Arg Val Met Gln Phe Asp Leu Gly His Ile His Ala
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Thr Ile Val Val Thr Leu Ile Gly Ala Thr Ala Leu Gln Val Ala Ser
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Asn Val Leu Ile Thr Ile Leu Thr Leu Asn Ile Ala Phe Leu Asn Phe
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Cys Ser Leu Ile Cys Met His Asn Leu Lys Arg Gly Ala Lys Ala Asp
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gtt caa gcg ttg gcc atc gct ttg gtc ttg gga ccg ctg ttc ctt gca 4175
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 Ile Ser Ile Pro Ala Val Gln Ser Arg Thr Ala Leu Asn Ala Leu Pro
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 Asn Arg
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860 865 870

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Leu Tyr Ala Gly Phe Gly Val Val Glu Thr Arg Lys Phe His Gly Asp
955 960 965

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Thr Ala Ala Cys Leu Ala Asp Val Tyr Leu Asp Leu Gly His Ile Leu			
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Gly Thr Leu Ser Met Val Ala Ser Leu Tyr Asp Thr Ser Ile Thr Ser			
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<213> Rhizobium leguminosarum bv. trifolii

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65 70 75 80
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Leu Ile Ala Val Ser Val Ala Thr Leu Glu Gly Ala Pro Arg Thr Gln
100 105 110
Thr Ile Ala Phe Ile Ala Leu Ser Ala Leu Arg Pro Phe Val Ala Gly
115 120 125
Trp Asn Ala Tyr Cys Ala Glu Val Phe Phe Ala Gln Gly Lys Arg Gln
130 135 140
Ile Val Arg Ser Val Ile Thr Arg Ser Ser Leu Ile Tyr Ala Gly Val
145 150 155 160
Asn Leu Leu Phe Val Gly Leu Ser His Phe Ala Gly Thr Gln Asn Ser
165 170 175
Ile Ile Ser Leu Leu Ile Gly Val Tyr Leu Ala Leu Phe His Asn Ala
180 185 190
Leu Ala Tyr Ala Arg Ile Leu Pro Thr Glu Trp Arg Phe Ser Arg Gln
195 200 205
Asp Leu Lys Asp Val Phe Ser Leu Arg Lys Leu Asp Leu Val Gly Ile
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Gly Ala Gly Leu Ser Ala Ser Phe Ile Asn Met Leu Glu Met Gly Phe
225 230 235 240
Leu Ala Leu Val Gly Trp Val Val Ala Ala Lys Phe Pro Gln Ile Ala
245 250 255
Val Phe Tyr Phe Pro Phe Phe Thr Leu Val Glu Leu Thr Ser Gly Leu
260 265 270
Ala Ile Gly Leu Gly Arg Ser Val Thr Glu Arg Leu Ile Thr Pro Arg
275 280 285
Pro Phe Pro Arg Leu His Val Leu Ile Ala Val Tyr Ser Thr Tyr Ser
290 295 300
Leu Leu Cys Phe Leu Ile Tyr Val Gly Leu Ile Gly Val Ser Asn Arg
305 310 315 320
Asp Ile Phe Ala Leu Pro Leu Ser Leu Ala Gly Leu Ala Leu Leu Phe
325 330 335
Leu Ile Cys Asp Gly Leu Gln Leu Val Val Arg Gly Tyr Thr Leu Ala

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<211> 258

<212> PRT

<213> Rhizobium leguminosarum bv. trifolii

<400> 5

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Cys Trp Leu Asn Ala Gln Leu Tyr Asp Asp Ile Ala Glu Arg Val			
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Gly Leu Gly Ser Val Thr Met Arg Ala His Gln Val Arg Leu Leu Leu			
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Asp Gly Tyr Gly Leu Ser Arg Lys Gln Arg Gly Gly Phe Val Asp Lys			
195 200 205			
Leu Ile Thr Phe Ala Val His Asp Ala Ala Glu Gln Ala Lys Glu Ala			
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Ala Val Thr Pro Glu Ser Asn Asp Ala Glu Pro Leu Trp Ala Ile Ala			
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Met Ile Glu

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Thr Arg Leu Val Lys Pro Ser Arg Glu Leu Ala Ala Ala Val Ile Leu	
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Val Tyr Arg Tyr Asn Val Val Asn His Glu Leu Glu Ala Ile Arg Ala	
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gttccttgca atctccattc ccgccgttca aagtcgaact gccctaa atg cac tac 4221
Met His Tyr

cga aca gat aaa ccg aaa gta ttc gta acc gac tcc ggc agg ttt gtt 4269
Arg Thr Asp Lys Pro Lys Val Phe Val Thr Asp Ser Gly Arg Phe Val
360 365 370 375

gct gac tgc cag ata att ctg ctt ggt cgc aag atc ata tgt acg gga 4317
Ala Asp Cys Gln Ile Ile Leu Leu Gly Arg Lys Ile Ile Cys Thr Gly
380 385 390

acc gat ctt cag tac gag att gcg gtt gca aaa gca aag tct gag ctt 4365
Thr Asp Leu Gln Tyr Glu Ile Ala Val Ala Lys Ala Lys Ser Glu Leu
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acg cgg gtt gca agg cgt ctc atg ctc gaa gct acc aat gcc ttc aac 4461
Thr Arg Val Ala Arg Arg Leu Met Leu Glu Ala Thr Asn Ala Phe Asn
425 430 435

aga gaa tcc gtc acc ctg ccg ttg agc ttg ttc gta acg cgg cca cat 4509
Arg Glu Ser Val Thr Leu Pro Leu Ser Leu Phe Val Thr Arg Pro His
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ctg tgc tgg atg cgc ggc aac aac tcc aca gga ttt gcc gca cat ccc 4557
Leu Cys Trp Met Arg Gly Asn Asn Ser Thr Gly Phe Ala Ala His Pro
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 Gly Arg Gly Gly Thr Gly Val Ser Glu Leu Pro Ser Gln His Asp Gln
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 Ile Ala Phe Val Glu Arg Gln Pro Val Arg Ile Asp Asp Val Thr His
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 Tyr Val Ile Gln Ala Val Ser Tyr Ser
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author	year	country	period	age	sex	status	type	duration	notes
1. H. H. H.	1955	USA	1955	10	M	10	10	10	10
2. H. H. H.	1955	USA	1955	10	M	10	10	10	10
3. H. H. H.	1955	USA	1955	10	M	10	10	10	10
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<213> Rhizobium leguminosarum bv. trifolii

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 Gln Ser Arg Ala Ser Ser Gly Leu Phe Thr Phe Val Ile Cys Gly Asp
 275 280 285
 Leu Lys Ser Tyr Thr Ser Arg Tyr Arg His Glu Arg Ser Tyr Arg Asn
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 Leu Leu Ile Asn Thr Ser Gln Leu Ala Gln Phe Tyr Leu Thr Leu Ala
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 Ala Arg Val Thr Arg Val Ala Arg Arg Leu Met Leu Glu Ala Thr Asn
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Val	Thr	His	Tyr	Val	Ile	Gln	Ala	Val	Ser	Tyr	Ser				
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